2nd Quarterly Report – Public Page

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Contract Number: **BAA No. DTPH56-10-T-000019**

Prepared for: *DOT/PHMSA*

Project Title: Advanced Development of PipeGuard™ – Proactive Pipeline Damage Prevention System (Project #364)

Prepared by: NSEARCH/Northeast Gas Association

Contact Information: Angelo Fabiano (afabiano@northeastgas.org, 973.265.1900 ext 215)

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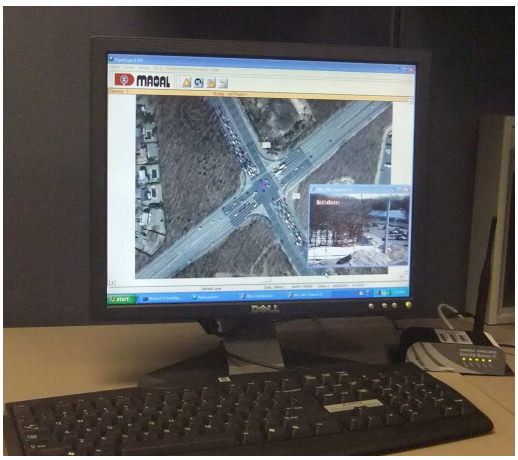
Public Page Section- Pipe Guard™ is a system originally developed as a general purpose sensor using seismic processing techniques to determine the presence of digging events (tunneling, etc.) near and around buried pipeline facilities. The technology inherent in PipeGuard™ is highly relevant for LDC operators as a tool to detect excavations in the vicinity of critical distribution pipeline sections. The objective of the project is to transform PipeGuard™ from a general purpose seismic sensor into a practical operating tool for utility operators. Properly engineered, this platform will provide early warning of excavation events via wireless communications. The system must be simple to install and allow for permanent and semi-permanent monitoring options.

Results and Conclusions- The PipeGuard™ System test site with two PipeGuard™ units was installed in Stoney Brook, NY with a remote communication link to National Grid's Distribution Dispatch Center (approximately 30 miles away). The project team completed an initial review and setup at the test site in early December 2010. A limited number of shovel and mini-backhoe excavation tests were successfully performed with positive results. Although system improvements have not yet been made, the basic system was able to detect and provide alarms on equipment digging events up to 100 feet away from the sensing source.

During the period planned field tests could not be performed due to snow/ice conditions at the site. Since the site is located at a major intersection snow/debris was plowed off the roadway and piled on to the side of the roadways, thereby making field testing unsafe and impractical. However, system communication improvements were to made to assure that detection/alarmed events are being transferred to the Dispatch Center are consistent and reliable.

PipeGuard™ sensing unit at test site



Graphic User interface with Video Display

Plans for Future Activity- The PipeGuard™ system will be optimized for the site to assure that the most effective settings are selected. All testing will be performed in accordance with established test guidelines. A variety of test holes will be made with excavating tools at various distances from the sensing units. NYSEARCH Staff and Senstar plan to identify specific system requirements needed for the final deliverable system scheduled for 2012. Plans are being developed to install and test new and improved hardware/software to meet the necessary detection requirements. This includes building a library of equipment signatures, introducing information of the actual dig location. In early 2011 field tests will be conducted to assure that the system is receiving alarms and operating correctly with little to no false alarms.